26 June 2025

Mr Christian Dunk
Australian Energy Market Commission
Level 15, 60 Castlereagh Street
Sydney NSW 2000

AIRTRUNK SUBMISSION to Improving the NEM Access Standards – Package 2 Consultation

Dear Mr Dunk,

AirTrunk Pty Ltd (AirTrunk) appreciates the opportunity to provide feedback on the Australian Energy Market Commission (AEMC) Consultation Paper on the *Improving the NEM access standards - Package 2* work program.

AirTrunk is an Australian founded and headquartered hyperscale data centre specialist creating a platform for cloud and AI services, serving global technology companies and large enterprise customers across Asia-Pacific and Japan. We develop and operate data centre campuses with industry leading reliability, technology innovation and energy and water efficiency. In Australia we already operate four data centre campuses in Sydney and Melbourne and have more in the development process.

AirTrunk is committed to working with the AEMC, the Australian Energy Market Operator (AEMO), Network Service Providers (NSPs) and others to manage reliability and security challenges, and our submission highlights the balanc the needs of the electricity system and the needs of the digital economy in order to maximise benefits for customers and the Australian community.

In our submission, AirTrunk provides further insight in response to themes from the consultation paper related to large loads, like data centres, and any potential risks to the electricity system. AirTrunk emphasises our shared interest in ensuring reliable power grids to meet demands for mission-critical digital services. Data centres can play a positive role in Australia's energy transition to becoming a clean and resilient energy superpower, while maintaining reliability.

Data centres also deliver significant benefits, both for the electricity sector and for the broader Australian economy. In fact, data centres address some of the biggest structural reform issues facing the economy – addressing falling productivity, catalysing the energy transition, and creating new, modern economy jobs.
Four features of the role of data centres in grid access are especially relevant to the AEMC's considerations:

1. Data centres have a very strong vested interest in maintaining and contributing to grid stability, as disruptions in power supply can lead to significant downtime for digital services and cause major economic losses. In fact, there are positive contributions to system stability such as strengthening minimum demand and providing support in times of system stress (e.g. UFLS or RERT). The reliable supply of uninterrupted electricity and digital services are both essential to everyday life as we know it.
2. While the Virginia disconnection event outlined in the paper provides a cautionary example, it needs to be noted that data centres do not want to disconnect from the grid and do not do so lightly. Every switch-over to back-up power systems introduces a range of difficult operational risks and costs that the data centre owner would prefer to avoid if possible. One of the key issues identified from the Virginia event was that the grid operator was unaware of the protection setting behaviour of the large loads. This appears more of an information problem rather than an insurmountable engineering or access standard

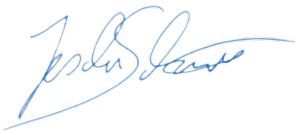
issue. We would welcome the opportunity to create a shared fact base and a better understanding of data centre technical operating parameters as a precursor to raising access standards.

3. Uncertainty of data demand and the phenomenon of 'phantom data centres' may exaggerate the perceived challenges. We actively support AEMO's efforts in building a consensus forecast and applying more due diligence on application viability in the grid connection process. More demand certainty will support system operators in planning and provisioning for system stability resources. This may also highlight that data centres typically do not switch on as large loads but ramp up over time, allowing for an incremental approach to connection access.
4. Australian businesses and consumers are demanding rapid access to digital services to grow the digital economy. Speed to market considerations for data centre connections are paramount, as timely deployment of new data centres is fundamental to economic growth through cutting edge technologies like AI, which could grow Australia's economy by an additional $45 billion to $115 billion by 2030.[1] Therefore, it is in Australia's interest to create an environment that supports the swift development of data centres. New rules or regulatory uncertainty that slows down data centre connections is likely to have a material net cost to the Australian economy.

Please find our responses to relevant questions from the Consultation Paper provided as an Attachment.

We thank the AEMC for the opportunity to participate in this process and would welcome the opportunity to meet with the AEMC to further discuss our submission.

Sincerely,



Joscha Schmitz
VP Energy & Climate

[1] Microsoft and Technology Council of Australia (2023) *Australia's Generative AI Opportunity.*

AirTrunk Response to AEMC Consultation on Improving the NEM Access Standards – Package 2 Consultation

Context of Data Centres in Australia Accessing the Grid

AirTrunk recognises the importance of a stable and reliable power system as critical infrastructure for the Australian economy and community. Data centres are also recognised critical infrastructure under the Security of Critical Infrastructure Act (2018), with Australians increasingly relying on digital services to support their lives. Every time we pick up a device to send a message, join a video call, use a shared device to collaborate on a document, run an internet search, purchase goods or pay a bill online, we are relying on the advanced capabilities of data centres. Other essential services like disaster response, front line emergency services, hospital systems, transport, flight control, banking and indeed electricity grid management systems are all now reliant on the digital infrastructure of data centres.

The growth in demand for data centre capacity is occurring around the world. It stems from the increase in use of digital services, the shift of more cloud computing from on-premise servers to data centres, and the new demand and uptake of artificial intelligence (AI) services.

Data centres don't exist just to be data centres, they are part of the technology value chain that supports the digital economy. They use energy in two ways; firstly to power the computing and data processing tasks driven by customers and end users, and secondly, to run the cooling systems that maintain the optimal temperature at which the computer power needs to operate. The compute processes generate heat which needs to be managed to ensure the longevity of the IT equipment.

Data centres aggregate the electricity demand across the digital economy. Amazon Web Services reporting suggests there is still more than 80% of cloud operated from on-premise servers in Australia. By aggregating these processes – taking the computation out of server rooms and basements, and into highly efficient, purpose-built data centre facilities – there is a 67% energy saving.[2]

At the same time, the energy use by on-prem servers tends to be invisible and not counted at all, leading to the perception that all energy use in a data centre is new, when in fact much of it has been displaced from a more inefficient use.

Security of business-critical data and infrastructure is vital for national security and business resiliency. Data centres house sensitive information that is integral to the functioning of government, businesses, and individuals. Ensuring that this data is stored securely, and backed up in paired data centres in what is known as a cloud availability zone gives customers continuity and assurance in the case of an outage or event impacting on a data centres.

Data centres are playing an important role in moving towards 24/7 clean energy, vital for a net-zero future. Globally nearly half of power purchase agreements in 2022 were signed by data centre operators.[3] In Australia, data centre operators are also actively driving the expansion of renewable energy capacity, with AirTrunk aiming to match 100% of electricity consumption at our sites with renewable energy by 2030.

---

[2] Mandala (2024) *Empowering Australia's Digital Future; Data Centres: Essential digital infrastructure underpinning everyday life*.

[3] Ibid, p.24

AirTrunk and other hyperscale data centre developers contribute heavily to the funding of required network upgrades which benefits other customers and provides opportunities for technological advancements. We partner with utility providers and work closely with them to prevent costs stemming from our power request being passed on to ratepayers in the communities where we build. We are partners in planning, risk sharing and capital cost contribution for customer-funded upgrades.

More broadly, the data centre industry presents a substantial investment opportunity for Australia. Investment in data centre infrastructure in Australia is forecast to top $26 billion by 2030[4] driven by the increasing demand for digital services, cloud computing and artificial intelligence. The development of data centres contributes to economic growth by creating jobs, attracting investment and fostering innovation. As an advanced technology industry, data centres drive the adoption of cutting-edge technologies and support the digital transformation of various sectors. The tech sector in Australia employs almost 1 million people, mostly in high paying, flexible jobs.[5]

Given this context, AirTrunk welcomes the opportunity to work collaboratively with the grid operators, regulators and NSPs to ensure that demand growth is adequately supported by a shared understanding and fact base of the technical parameters of data centres as grid participants. This is towards a shared goal of a stable and resilient electricity grid which data centres fundamentally depend upon for keeping critical digital infrastructure online.

[4] Ibid, p.13

[5] TechCouncil-Tech-Jobs-Update-May-2023_final-1.pdf

Response To Consultation Questions

Question 1: Defining large loads in the context of this rule change request

In the context of this rule change request and AEMO's ongoing consideration of the definition for large loads through its Large Loads Review:

1. Are stakeholders supportive of AEMO's ongoing process to address the system security implications and performance standards for large loads, including how large loads ought to be defined in the NER?

2. To what extent do stakeholders think that the Commission should consider the definition of 'large loads' in the context of this rule change?

3. If it is considered, should large loads be defined based on the relevant access standard, or should a large load be more holistically defined in the NER?

4. Alternatively, should we consider whether to apply guiding principles and timing for AEMO to produce a proposed definition, which is currently being considered in AEMO's Large Loads Review?

We understand that AEMO's Large Loads Review is intended to facilitate consultation between AEMO and the sector, including data centres, in some detail on the technical operating considerations, mechanisms and options regarding large loads. AirTrunk welcomes the opportunity to support an enhanced understanding of the technical capabilities and real-world deployment models of large loads such as data centres. AirTrunk supports AEMO's intentions to engage with and better understand large load and looks forward to working with AEMO to study and explore all the technical points via the Large Loads Review.

Given this work is underway, it would be preferrable to see the Large Loads Review progress, and for the outcomes of that work and engagement to then inform decisions such as the definition of large load. An attempt to define 'large loads' in the rules in any detail at this stage risks making a rule that comes to be seen as misaligned once AEMO's Large Loads Review further examines the nature, risks and opportunities of a variety of large loads including data centres. From our engagements, we find there is still a limited understanding of the data centre load technology and load operating behaviours. There is a risk that applying IBR technical requirements to IBLs such as data centres is likely to be shown as unnecessary as a greater understanding of the nature of data centre loads develops. We therefore recommended creating a stronger shared fact base as part of the AEMO Large Load Review, before considering significant changes.

To the extent that the large loads definition does remain within the scope of the AEMC's current program of work, the AEMC should consider how any definition of 'large loads' and related rules would apply to distribution and transmission connections and review the expected implications for applicants, networks and the broader system.

If the AEMC was to provide guiding principles and timing for AEMO to produce definitions, the characteristics of data centre loads we outline in our cover letter should be helpful in framing these principles. In particular, we would highlight that data centres do not start out as large loads on "day 1", but build out and ramp up gradually as construction on a 'data centre campus' progresses in phases. Any definition of 'large loads' that imposes onerous requirements on data centres well before they are actually large loads risks undercutting the speed to market for data centres that is critical to position Australia as an investment destination over global competition and to become a leading digital economy.

AirTrunk is concerned the definition of 'large loads' (or other outcomes of this review) introducing any uncertainty, delays and potential re-work to connection applications currently in progress. Grid connection processes with NSPs are already challenged from the large number of applications and introducing more complexity to grid access connection processes should be carefully considered. While considerations are ongoing, current applications should proceed unencumbered by future uncertainty. Requirements on future connection processes should carefully weigh additional complexity and timelines against minimum standards to be considered.

In terms of data centres, there is a generational investment opportunity and unnecessary connection delays would be a counterproductive outcome for the development of Australia's digital economy.

Question 2: Amending the NER to address the influx of large loads
1. Do stakeholders have any reflections or data and information they wish to share with the AEMC regarding the prospective growth of large loads connecting to the NEM, including from international experience?
2. Do stakeholders agree with AEMO that the expected growth of large loads may present a risk to power system security?

Load Forecasting
Developing data centre load growth forecasts is currently challenging. As AEMO has shared in the consultation, the level of enquiries and applications materially inflates the expected actual demand. This is the result of speculative enquiries and applications to multiple NSPs for the same data centre or underlying customer demand. This creates the phenomenon of 'phantom data centres' where only a small portion of applications have a reasonable prospect of proceeding. [6]

Inaccurate and potentially inflated load forecasts can present several issues, including:

- congesting the grid application process and unduly burdens NSP resources, delaying genuine projects
- creating uncertainty for network planners on actual system stability requirements to plan and provision for
- distorting investment decisions on where to connect and grid augmentation
- creating a 'fear factor' overstating the challenges to the system
- creating media and community concern which can lead to policy responses with unintended consequences.

Australia is not alone in facing these challenges.

Avenues to address this challenge include:

- **Stronger assessment of applications**: the trend from NSPs (in more advanced markets) globally is to move away from a first-come-first-served approach to one utilising due diligence criteria and aligning deployment of NSP resources and connection certainty in line with demonstrated project maturity. In Australia, AusNet has articulated one option for a framework and this and similar approaches can be a good starting point[7]. Rules from the AEMC or guidance from the AER that moves Australian NSPs to consider project maturity through the process will benefit NSPs as well as genuine and likely connection applicants.
- **Transparent forecasting**: demand forecasting from the industry to inform bottom-up level planning can play an important role in improving the quality of data centre load growth forecasts. AirTrunk already participates in the annual AEMO ESOO demand survey, we provide electricity load forecasts for all of our operational data centres with full transparency and explanatory notes on how we forecast this. For future data centre developments, we understand the NSPs already provide forecasts based on connection applications (which may be more appropriate than requesting individual data centres

[6] **A fraction of proposed data centers will get built. Utilities are wising up. | Utility Dive**

[7] AusNet (2025), *Data centres: When to include them in electricity demand forecasts* https://www.ausnetservices.com.au/our-insights/data-centres-when-to-include-them-in-electricity-demand-forecasts

disclose information about future developments, due to the commercially confidential nature). Creating a common framework on probability and ramp-up assumptions for the NSP-level forecasts may be beneficial.

As identified in the list of challenges arising from inaccurate data centre demand forecasts, the inflation of these numbers can lead to undue concern about data centre load. The characterisation of growing data centre loads as a risk to power system security can be exaggerated as a result. It also makes it harder for system planners and operators to dimension and provision for system stability resources.

More generally, the characteristics of the power system are changing – coal closures, decentralised generation, intermittent renewables, rooftop solar, battery storage and hydrogen production. All of these are both threats and opportunities for electricity grids – the same is true of new loads such as data centres.

Grid stability is a priority

Data centres are in fact heavily dependent on a secure grid and have a very strong vested interest in maintaining and contributing to ongoing grid security. Grid reliability is a key factor in locational decisions for data centres and throughout the design and build process. Data centres host sensitive IT equipment and disruptions in power supply can lead to significant downtime for digital services and major economic losses.

While the Virginia disconnection event outlined in the consultation paper provides a cautionary example, it needs to be noted that data centres do not want to disconnect from the grid and do not do so lightly. Every switch-over to back-up power systems introduces a range of difficult technical and operational risks and costs that the data centre owner would prefer to avoid if possible.

As with any growing industry, we see value in alignment, planning and transparency. One of the key issues identified from the Virginia event was that the grid operator was unaware of the protection setting behaviour of the large loads. This seems an important point to address, noting it appears more of a visibility problem rather than an insurmountable engineering issue.

Moreover, data centres positively support the stability of the grid and this should be considered in a holistic assessment. One of the key operating challenges on Australia's grid today is the ever-dropping minimum demand due to the large uptake of rooftop solar in domestic residences – itself a huge success story. Data centres don't take public holidays or weekends when there can be a higher need for an energy offtaker. By adding stable baseload to the high voltage system, data centres provide reliable load during the hours of minimum demand.

Finally, data centres can provide critical flexibility themselves in times of severe system stress. When the grid suddenly finds itself short of generation to supply the consumer load, for example when generating plants trip off the grid or other major outages strike, then data centres are well-placed to come to aid and restore system stability – whether through Under Frequency Load Shedding (UFLS) or Reliability and Emergency Reserve Trader (RERT).

There are other benefits of adding data centre loads to Australia's energy grids that should also be considered in a holistic assessment. This for example includes the underwriting of new renewable energy projects – as noted in the introduction, data centres are among the largest buyers of renewable energy in Australia today. Growing data centre loads will grow renewable offtake. Other grid benefits include data centres paying for consumer-funded network augmentation and anchoring new grid build-out that will reduce the cost of new industrial and commercial precincts and residential neighbourhoods expanding in the same network area.

The growth in data centres does require careful management and AirTrunk continues to actively participate in a variety of Australian regulatory processes to both increase authorities' understanding of the nature of data

centres' electricity use and ensure system requirements are balanced with the major opportunity the growth in the digital economy, enabled by date centre development, can deliver for Australia.

The reliable supply of uninterrupted electricity and digital services are both essential to everyday life as we know it.

Question 3: HVDC links to procure system strength services from third parties

No response.

Question 4: Limiting short circuit ratio requirements for customer loads to IBR, and introducing flexibility to the access standard

In relation to AEMO's proposal to limit the application of short circuit ratio requirements under clause S5.3.11 to large inverter-based resources that is IBL:
1. Do stakeholders consider it an issue that the short circuit ratio requirements under clause S5.3.11 apply to all IBR plant without any size threshold?
a. Should it only apply to large inverter-based resources as defined in AEMO's SSIAG?
b. Is the definition of a large inverter-based resource in the SSIAG sufficient for the purposes of this proposal?
2. Are there alternative solutions stakeholders consider would be more effective?
3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.
In relation to AEMO's proposal to amend the NER to introduce flexibility in clause S5.3.11 to allow the NSP and AEMO discretion to agree to a minimum short circuit ratio requirement above the minimum requirement of 3.0:
1. Do stakeholders agree there should be flexibility to agree to higher short circuit ratio requirements? Could there be unintended consequences?
2. Are there alternative solutions stakeholders consider would be more effective?
3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.

Classifying data centres as IBRs in this context and the application of IBR requirements to data centres (whether size thresholds are introduced or not) may not accurately reflect the technical characteristics of data centres.

While data centres use internal inverters such as Uninterruptible Power Supply (UPS) systems, they draw one-directional, conventional AC power from the grid. These broad characteristics of data centre grid connections are fundamentally different to those of IBRs like solar farms or BESS. As such, considering data centres under the same technical frameworks as IBRs may fail an objective cost/benefit assessment. Therefore, we suggest further consideration is given to how data centres are classified and what short-circuit ratio (SCR) requirements – and other technical requirements - should apply given their characteristics. This ultimately ties back Consultation Question 1 concerning definition of large load and should be a key area for AEMO's Large Loads Review.

Data centre loads ramp-up over time and in many cases over several years. Ensuring the Rules governing SCR requirements allow data centres and AEMO/NSPs to appropriately manage this transition period, ahead of a data centre becoming 'larger', will balance grid stability with timely data centre deployment.

While it may be valuable to allow AEMO / NSP to increase SCR requirements on data centres where this reflects system needs, this must be balanced against the challenges this will create for connection applicants, in terms of connection delays and added costs. There should be a clear process outlining preconditions such as how and when AEMO and NSPs may increase the SCR requirements, ensuring any increase is 1) known early in the connection process, 2) not made without robust supporting evidence and 3) not in anticipation of factors that have a low probability of occurring.

Ultimately, reforms should be seeking to maintain system security while enabling, rather than deterring or delaying, industry growth.

Question 5: New definitions for protection systems

No response.

Question 6: Conditions for generator protection systems

No response.

Question 7: Provision of information on ride-through capability

In relation to AEMO's proposed changes to enable NSPs to request information on loads' ride through capability:
1. Do stakeholders agree that NSPs and AEMO lack visibility of loads' ride-through capability and that this creates a challenge for system security?
2. Do stakeholders support AEMO's proposed rule to require network users to provide information about connecting load's ride-through capability to the NSP on request?
3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule?

AirTrunk agrees visibility of ride-through capability for large loads is important for understanding system dynamics. In the Virginian event outlined in the paper, if the grid operator had been aware of the protection settings of the large loads, it could have adjusted the auto-recloser settings to avoid the major disconnection.

It is important, however, that the implementation of the information provision rules is pragmatic. While AirTrunk does not support strict and detailed specification of information provision in the rules, it is in both applicants' and ultimately consumers' interests to avoid an outcome where the information required varies dramatically across different NSPs. Some guardrails in the rules may be appropriate, such as minimum information requirements. This should also consider industry readiness. For example, it should be limited to the information OEMs and technology providers can make readily available and not add delays or barriers (noting that readiness will increase over time as this information provision becomes wider practice).

Question 8: Protection settings to maximise ride-through performance

In relation to AEMO's proposed changes to amend clause S5.3.3(c) of the NER to encourage protection settings that maximise loads' ride-through capability:
1. Do stakeholders agree that the current arrangements allow conservative load protection settings that may unnecessarily reduce loads' ride-through capability?
2. Do stakeholders support AEMO's proposed rule requiring cooperation between the NSP and the network user in the design of protection systems and settings to maximise ride-through capability?
3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.

There is a strong incentive for data centres to not have overly conservative settings as switching over to back-up power systems is a technically and operationally risky and costly exercise for data centres – switching over is best avoided if possible.

The word "reasonable" is critical to this proposed rule amendment. AirTrunk is encouraged by AEMO's intention to not increase the cost of protection systems for connecting plant and we agree on the value of cooperation to agree what is "reasonable" for a given connection. Notwithstanding this, we remain concerned by the potentially significant cost and delay implications of a situation in which AEMO/NSP and a data centre proponent disagree on what is reasonable. The inclusion of a reference to 'good electricity industry practice' is helpful, but it is worth noting that as data centre technology and designs are still evolving it will take time for a 'good electricity industry practice' consensus to be agreed.

It may be appropriate for a principles-based approach or for the rules to outline what 'reasonable' cannot mean, such as a tolerance band that:

- is wider than what a piece of equipment is warranted for;
- is probable to result in outages or disruptions to critical processes; or
- endangers the safe performance of equipment, with the potential of damage or loss of operating capability.

Ride through settings (both disclosure and tolerance band) is another area where it is important that the requirements can work with the nature of data centre development – load growing over a number of years and protection technologies potentially changing throughout the buildout of a site. An approach from AEMO and NSPs that 1) prioritises clarifying protection outcomes rather than clarifying exact equipment to be used and 2) agrees staged ride-through requirements that take effect as the data centre's load grows over a number of years, would help enable timely data centre development.

Question 9: New access standard for detection and response to instability

In relation to AEMO's proposed new access standard for detection and response to instability that would apply to large inverter-based loads:

1. Do stakeholders agree that there is an emerging need for large inverter-based loads to play a role in managing instability in the NEM?

2. Do stakeholders support AEMO's proposed new access standard for instability detection and response by loads as set out in Box 4?

a. Which parts of the proposal do stakeholders support, or oppose?

b. Do stakeholders agree with the materiality thresholds for application of the automatic access standard and minimum access standard (see Table 4.2)?

3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.

While data centres use internal inverters such as UPS systems, they draw one-directional, conventional AC power from the grid. These broad characteristics of data centre grid connections are fundamentally different to those of IBRs like solar farms or BESS. As such, any move to subject data centres to the same instability detection and response requirements as IBRs may not deliver the same benefits. We suggest further consideration is given to how data centres should be classified and what instability detection and response requirements should apply given their characteristics. This ultimately ties back to Consultation Question 1 concerning definition of large load and should be a key area for AEMO's Large Loads Review.

Any occurrence of instability in a data centre's on-site distribution network will be a major issue for the data centre before it poses any material risk to the stability of the wider grid. If implementation of the new access standard leads to equipment triggers and settings being configured to disconnect the full load for minor unstable behaviour, this would be harmful to the data centre and its customers, as well as potentially contradictory to other aspects of the rule change proposal designed to maintain connection to the network.

AirTrunk understands the importance of managing instability in the NEM for AEMO and welcomes an opportunity to discuss with AEMC and AEMO how this may be addressed in the most effective way.

Question 10: Under-frequency ramp down of large loads

In relation to AEMO's proposed changes to amend the NER to facilitate the ability for loads to ramp down:
1. Do stakeholders agree some loads may be more flexible with the ability to ramp down their load in an emergency rather than disconnecting in blocks?
2. Do stakeholders agree that the NER should be amended to allow for the provision of interruptible load by way of fast ramp down?
3. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.

AirTrunk appreciates that some loads will have the ability to fast ramp down and this could provide system benefits in certain circumstances. We are open to exploring with AEMO and NSPs how our load could shed or ramp down in a more co-ordinated way when required. However, we see potential impacts to the order of Under Frequency Load Shedding (UFLS) if ramp down of load is not fast enough and we are concerned by how this may impact the security of our connection.

It is important that any reforms are cognisant that data centres are mission critical facilities providing critical digital infrastructure, and that there are significant public consequences in case of disruption.

Question 11: Clarification of credible contingency definition for disturbance ride-through

No response.

Question 12: Testing and commissioning

1. Do stakeholders support AEMO's proposed amendments to clause 5.7.3 to refer to schedule 5 plant in respect of AEMO's ability to request compliance tests for registered plant?
2. Do stakeholders support AEMO's proposed changes to clauses 5.7.2 and 5.7.3 to extend the rights for testing of power system plant to apply to non-registered schedule 5 plant?
3. Do stakeholders support AEMO's proposed changes to the NER to extend the requirement for coordinating commissioning procedures for non-registered schedule 5 plants with a maximum capacity equal to or greater than 30MW of 30MVA?
4. Should the Commission consider extending enforceability and compliance requirements under rules 4.14 and 4.15 to all 'schedule 5 participants', which includes non-registered participants?
5. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning.

AirTrunk seeks to engage with AEMO and NSPs to ensure effective coordination of testing activities, to avoid delays to power-on dates, as these can lead to major costs for data centres, their customers and the development of Australia's digital economy. We encourage the development of rules that do not introduce inflexibility around

coordination that could lead to major project delays. While data centres use internal inverters such as UPS systems, they draw one-directional, conventional AC power from the grid and it is important that testing and commissioning requirements are fit-for-purpose given these load characteristics.

AirTrunk is concerned that the proposed extension of the 'right of testing' could have unintended consequences. While the costs of compliance testing are borne by the requesting party (where the results demonstrate that the plant meets the relevant requirements), the actual full cost of downtime resulting from 'testing' will greatly outweigh the direct testing costs. To ensure there are not distorted incentives, we strongly recommend the 'right of testing' be restricted to AEMO and NSPs and there is flexibility for data centres to work with AEMO/NSPs to undertake required testing while avoiding data infrastructure downtime. To be clear, AirTrunk agrees that where equipment is having a negative effect on the grid and is in breach of its compliance, it should be isolated and rectified.

Any increase in power-on requirements for a connection needs to be able to work with the gradual build out and ramp up of data centre sites, where they may take several years to connect all loads and electrical equipment and for these to reach full load. It would be impractical to require all testing upfront and a staged process would be more representative of the load.

Question 13: Extension of time for complex issues in future access standards reviews

In relation to AEMO's proposal to amend clause 5.2.6A of the NER to allow flexibility for extending the time limit for completing each review:

1. Do stakeholders agree that the requirement to complete each review within 12 months of the approach paper being published is too inflexible or may inhibit proper analysis and consultation?

2. Do stakeholders consider that AEMO should be responsible for setting a new date for publication of the final report? Is there an alternative approach that would better address the issue?

3. Do stakeholders agree that AEMO should publish a notice when an extension is needed, outlining the reasons as they may relate to complexity/difficulty, or a material change in circumstances?

4. Do stakeholders have any concerns or suggestions in relation to this element of AEMO's proposed rule? If so, please describe your concerns and any related suggestions and reasoning?

AirTrunk agrees with AEMO that the 12-month time limit can inhibit necessary analysis and consultation. It is essential, however, that any amendment to extend the timeframe is done in a way that does not put connection applications on hold or in delay while AEMO/NSPs wait for the completed review.

Question 14: Assessment framework

Do you agree with the proposed assessment criteria? Are there additional criteria that the Commission should consider or criteria included here that are not relevant?

AirTrunk considers the assessment criteria not unreasonable, but we suggest the second and third elements need to be broadened to better serve the long-term interests of customers.

Regarding the second criterion, we agree innovation and flexibility are important. This should be interpreted as ensuring the application/introduction timeframe of rule changes does not inhibit or delay investments in critical infrastructure such as data centres. It is important that current applications near investment decision are able to

proceed and receive connection approvals. Any delays while awaiting the outcomes of the Large Loads Review or other long-timeframe technical reviews are likely to be very harmful to the growth of Australia's digital economy. This may mean including certain grandfathering provisions, perhaps including a future review of an application as part of the project implementation cycle.

We strongly support the third criterion on implementation considerations promoting a balanced approach, this is consistent with a key theme running throughout our submission. To truly serve the long-term interests of consumers, this balance must also consider the major economic benefits to Australia of a timely build out of data centre capacity. It is fundamentally not in consumers' interest for overly onerous rule changes that lead to an unnecessary slowdown of data centre deployment and resultant wind-back in the growth of the digital economy.

There may be a relevant lesson here from transmission planning. While the RIT-T process focusses on net market benefits, several state governments have considered alternative transmission planning frameworks that consider the broader investment, jobs and decarbonisation opportunities from transmission investment. Similarly, for this case the assessment criteria should consider the benefits to customers from the growth of the digital economy.